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The Future of Community Wind Projects in Vermont

Wind power is the fastest growing renewable energy source in the United States and around the world today.¹ In fact, the market for wind energy grew by an average of 28% per year between 1999 and 2003 in the U.S.² Its increasing popularity comes as no surprise as America faces rising fuel costs and mounting concern over global warming. As the cost of energy production by wind declines, more people across the country are investing in community wind projects.

Community wind projects have been popular in Europe for decades, and have just taken off over the last few years in the U.S. By definition, the projects are owned and developed locally, with at least one person in the community holding a significant financial stake in it. While a project tends to generate 600 kilowatts per hour (kWh) or more, the size often varies.³

Examples of successful community wind projects abound in states such as Massachusetts, Minnesota, California, Oregon, and more. With each success story, more Americans are realizing the benefits that community wind can offer their local economy and environment. In Vermont, community wind projects have the potential to create jobs and inject capital into local economies, save the state a significant amount of money, aid struggling farmers, and ensure the continued existence of Vermont's industries which are at risk of extinction due to global warming: maple sugaring, agriculture, and tourism.

Vermont is at a critical juncture. The state's contracts with Vermont Yankee Nuclear Power Station and HydroQuébec, expire in 2012 and 2015 respectively.⁴ Combined, these two generating sources now provide electricity to 2/3rds of the state.⁵ As these contracts expire, Vermont can replace them with power from finite resources which contribute to global warming and threaten Vermont's industries, or can develop renewable energy sources, such as wind, improving the environment and Vermont's economy.

Below you will find a description of the benefits that a community wind project has to offer, as well as the steps one can take to develop such a project in Vermont. You will also find case studies of successful community wind projects, as well as a brief overview of important policies in Vermont, ownership models, and financial incentives. This document should leave you with a basic understanding of why citizens as well as local and state governments across the country are developing community wind projects, and why and how such projects should be developed in Vermont.

Local Benefits

Community wind projects offer an array of benefits to the local community. For starters, wind can help preserve Vermont's environment and Vermonters' livelihood. Wind is a

renewable energy resource that does not emit air pollutants, and therefore does not contribute to global warming, a grave threat to the earth and thus the human race. As mentioned earlier, several industries, and therefore thousands of people, in Vermont depend on the environment for their livelihood. An investment in community wind projects is an investment in Vermont's future.

Wind power is also very affordable. In fact, the cost of wind per kWh is comparable to that of fuel prices, with wind usually costing between 4 and 6 cents per kWh in the United States, and only slightly more in Vermont due to the cost associated with mountain top installations.⁶ The cost of wind power also offers something that fuel does not: price stability. With wind energy, the price is almost always fixed for years into the future, a benefit which would help shelter Vermonters from the volatility of prices and availability associated with importing the finite resource of oil.

Community wind projects are also incredibly beneficial to the local economy. When a project is owned locally, the owners have a higher incentive to utilize local resources as they themselves are residents of the same town. Community wind projects create new jobs in development, construction, and operation, and developers of such projects often purchase materials and other supplies locally. In general, money generated by a wind project that is locally owned is more likely to stay in the community than is money generated by an out-of-town project.⁷ Local tax revenues rise (one study estimates that they increase by \$1,000.00 per kWh⁸) and the owners of the wind project sites, who are oftentimes farmers, are compensated financially through land-lease agreements for use of their land. These economic benefits to rural areas are being discovered in towns across America, and are outlined in the following case studies.

A Case Study: Hull Wind

Hull Wind, a community wind project in Hull, Massachusetts, has proven itself to be a beaming success over the course of its long lifetime. The project was first developed in the 1980's by a handful of dedicated citizens and a grant from the Massachusetts Department of Energy Resources.⁹ After some hard work and careful planning, the fruits of their labor were realized. The first turbine was erected during the 1980s and was later destroyed in a 1997 storm. (Technology has since improved turbines so as to protect against high wind speeds.) Currently, Hull Wind has two turbines producing electricity, named Hull 1 and Hull 2. Hull 1 is a Danish-made V47 model which produces 660 kWh and has a lifetime guarantee of 20 years. Hull 2 is a Danish made V80 model which produces 1.8 MW.

Hull Wind is owned by the town and run by the Hull, Massachusetts' Municipal Light Plant. When Hull 1 and Hull 2 produce electricity, the power is funneled into the municipal utility's power grid for local electricity needs. It is estimated that Hull 2 alone will provide enough electricity to power approximately 750 homes per year and displace about 3,000 tons of carbon dioxide.¹⁰

In addition to serving as a renewable energy source, educational tool, and a popular tourist attraction, the project has been described as a "cash cow" by John MacLeod, the operations manager of Hull, Massachusetts' Municipal Light Plant.¹¹ MacLeod is referring to Hull's ability to produce electricity at the rate of one kW of electricity for 3.4 cents, but receive 6.3 cents per kW with the help of the Federal Production Tax Credit and renewable energy certificates (two financial incentives for wind projects).¹²

Such economic benefits are greatly appreciated by the town and taxpayers. In its final three years of production, the first turbine (which provided electricity to the local high school) reduced the school's electric bill by 28% and saved the town \$21,200.00.¹³ Over the course of Hull Wind's lifetime, the project has saved the town two million dollars, half a million of which has been saved since 2003.¹⁴

As a beaming success, Hull Wind has attracted the attention of municipal utilities from around the state of Massachusetts who want to find out how they too can generate similar benefits in their communities.¹⁵

A Case Study: Minwind I & II

The Minwind I & II community wind projects have been a huge success for farmers in Minnesota. They were developed in Luverne, Minnesota in 2000 by farmers who were looking for a new source of income and a way to boost the local economy.¹⁶ The projects are nearly identical, both with a power output of 1.9 MW.¹⁷

The Multiple Local Owner model (see "Ownership Models for Vermont" section for further discussion) was used to develop Minwind I & II. Under this model, the interested farmers formed two limited liability corporations (LLCs) which could take advantage of the major federal incentives. The LLCs are democratically controlled, and 85% of the shares are owned by local farmers.¹⁸ (The farmers who began Minwind report that obtaining startup capital was easy; 66 investors bought all available shares in less than two weeks time.¹⁹) The projects sell their power to Alliant Energy through a 15 year long power purchase agreement with them.²⁰

Farmers and non-farmers alike have benefited greatly from Minwind I & II.²¹ Farmers are now receiving paybacks on their investments, and the farmers who own the land where the turbines are sited are receiving financial compensation as well.²² The project has also been a success for those outside of the farming community; Minwind I & II have aided the local economy by buying materials and contracting labor locally.²³

Minwind I & II have met with such success, that the farmers have since purchased seven additional 1.65 MW turbines.²⁴

Wind Power in Vermont

Communities in Vermont, like communities across America, can develop successful community wind projects and reap the economic and environmental benefits. Vermont certainly has the resources. The Vermont Environmental Research Associates (VERA) found three percent of Vermont's total land (public and private) to have wind speeds of Wind Class 4 or higher, while the Vermont Department of Public Service estimates that Vermont has 759 miles of ridgeline which could be developed for utility-scale wind.²⁵ The majority of the land which is suitable for a community wind project lies above 2,500 feet along the North/South ridges of Vermont's mountains.²⁶

Community Plan of Action

The following is a brief explanation of the various considerations that would be involved in the first two stages of developing a community wind project in Vermont:

1) **Project Conception:**

- **Land:** Extremely important to the success of your project will be finding a proper site. You should obtain topography maps to locate high points. When selecting a site you will want to consider a number of questions, such as: What is the average wind speed at the site? Who owns the land? Is it public, private, situated on a nature preserve or in a state park? Are there legal restrictions on the site? Is the owner interested in a wind project being sited on the land? What sort of payment arrangement might be made in the future for use of the land? How far is the nearest transmission line? How far is the nearest access road? Remember that the construction of additional transmission lines is sometimes prohibitively expensive and should be avoided when possible.
- **Outreach:** You will also want to develop a community education plan in order to dispel rumors and myths about wind projects in general and your project specifically. Misinformation can lead to lack of support in the local community, create more problems during the permitting process, and ultimately be a barrier to success. A study conducted by Colombia University found that communities which were educated about a project were more likely to reach consensus regarding the nature of its development.²⁷ Part of outreach will include explaining the benefits, especially for the local economy to the community.
- **Supply and Demand:** You will also need to identify a use for the power that your project will generate. Part of the identification process involves deciding whether you will use the power for direct on-site consumption or will sell the power to a utility. If you choose to use it for on-site consumption, you will want to study your average and peak amounts of on-site power usage to ensure that your project will pay for itself through savings on electricity bills. You will also need to discuss with the utility whether approval for your project can be reached (assuming that your project exceeds the power output amount that a utility is required to net-meter for). If you choose to sell your power to a utility, you will want to engage in discussions with the local utility regarding whether they are interested in purchasing power and if a power purchase agreement (PPA). This agreement is incredibly important if you choose to sell your power; it will ensure future revenue which will enable you to pay off the cost of developing the project and help you secure loans during the development phase.²⁸

Questions to consider when investigating the utility are: Does the utility have a need for renewable energy sources? Remember that Vermont utilities must supply their incremental growth in demand with renewable energy sources. Has the utility signed PPAs with renewable energy projects in the past?

2) **Project Planning:**

- **Ownership and Financing Models:** Selecting an ownership and financing model and understanding how that model will interact with federal and state incentives is

extremely important to the success of a community wind project. Financial stability of the project, both before and after it is built, should factor heavily into your decision. Wind projects are a very expensive investment, requiring a significant amount of start-up capital. Studies can sometimes cost up to hundreds of thousands of dollars to be performed, testing wind speeds, the environmental impact of the proposed project, and more. Wind projects can be, and have been, very successful business ventures, but you must plan accordingly. You will therefore want to identify the federal and state incentives your model will utilize and research the application processes and deadlines. This research will likely involve consulting financial advisors.

- **Financing Outreach:** Typically, projects in the U.S. have required the help of outside investors.²⁹ If you are considering the use of a model which requires an investor with tax credit appetite (who has enough tax liability to utilize certain federal incentives), then you will want to begin compiling a list of potential investors and soliciting their interest. You should also discuss the PTC with financial consultants as it is a complicated incentive. Remember that for a community wind project to truly be a part of the community, a portion of the project must remain community owned.³⁰
- **Permits and Policies:** You will also want to learn more about the permitting process at both the state and local level. In Vermont, all commercial-scale wind projects are subject to the scrutiny of the Vermont Public Service board (VTPSB) and must obtain a “Certificate of Public Good” before being built. You will also want to research potential regulations regarding the construction of wind turbines for the town and region where you have proposed the project.
- **Equipment Purchase:** The U.S. is currently facing a shortage of wind turbines and equipment because the demand is exceeding the supply.³¹ The shortage has resulted in difficulty for small wind projects to obtain contracts with wind equipment companies; wind equipment companies appear more likely to accept large wind project contracts (for example: 40 turbines). With regard to this problem, it will be especially important to confirm what company is willing to supply you with turbines and when. Some community wind projects are using a “piggy-back”³² strategy in which the community wind project will order turbines in conjunction with a larger project. Mark Sinclair of the Clean Energy Group suggested that a community wind project in Vermont could try to piggy-back on the Searsburg project of Searsburg, Vermont which might add more turbines to the existing project in the near future.³³

Vermont Policy Considerations

To develop a community wind project, one must have a basic knowledge of key standards, institutions, and incentives in Vermont. The following is a discussion regarding utility structure, renewable portfolio standards, and net-metering laws.

Utilities play an incredibly important role in community wind projects. Developers of a community wind project must decide how their wind system will interact with a utility. A municipal utility might own the project, or if it does not own it, the developers might sell the power to a utility through a power purchase agreement (PPA). Developers could also

hypothetically use an aggregate net-metering system with a utility, although few community wind projects pursue this option in the U.S., and it is unlikely to be utilized in Vermont.

Currently, there are 21 electric distribution companies in Vermont, all of which are regulated monopolies that operate with a “certificate of public good” from the Vermont Public Service Board (VTPSB).³⁴ Four of these utilities are investor owned, 15 are municipal electric departments, and two are member-owned rural cooperatives.³⁵ Remember that municipal electric departments are ideal for developing community wind as they are owned by the town, and ownership thus is local.

Utilities in Vermont are going to be on the look out for owning or buying power from renewable energy sources, such as wind, thanks to Act No. 61 (s.52). Act 61 requires all utilities to meet their incremental growth in demand between January 1, 2005 and January 1, 2012 with renewable energy sources.³⁶ If utilities have not met this standard by July 1, 2012, renewable portfolio standards (RPS; in which utilities must obtain a percentage of their power from renewable energy sources) will be imposed.³⁷ Act 61 has essentially created an incentive for utilities to invest in energy sources such as wind.

A developer of a community wind project should also have an understanding of net-metering and Vermont’s specific net-metering standards. Net-metering is an agreement between the owner of a renewable energy project and a utility that allows the owner’s electric meter to spin backwards when the renewable energy project produces more power than it is currently consuming on-site (the location of your meter). When the meter spins backwards, the owner is credited on the next month’s utility bill. For a community wind project, one would request aggregate net-metering, so that multiple sites (or homes, businesses, etc.) could net-meter from the same wind project.

Like the majority of states in the U.S., Vermont’s net-metering standards are currently too small to attract a community wind project. (Vermont utilities do not have to net-meter for off-farm wind systems with an output of 15 kWh or more or for on-farm wind systems with an output of 150 kWh or more). Having a low net-metering standard does not constitute a significant barrier to a community wind projects in Vermont; community wind projects are developed in other states with similarly low standards. It merely means that developers in Vermont, like developers in most states, will not want to pursue a relationship with a utility that involves this service. Looking to the future, developers should watch for discussion of net-metering in the news as the Vermont legislature considers the expansion of the current standards.

Ownership Models for Vermont

According to a study entitled “A Comparative Analysis of Community Wind Power Development Options in Oregon,”³⁸ the most attractive ownership models for community wind projects sell power to an unrelated party, utilize federal incentives (such as the Renewable Energy Production Incentive or the Federal Production Tax Credit), and do not require the net-metering service.³⁹ While Vermont does not share the same state policies and incentives as Oregon, the study’s emphasis on utilizing federal incentives and non-reliance on net-metering make the study a useful tool for Vermonters who are interested in developing community wind. The following is a discussion of promising ownership models for community wind projects in Vermont. The first two models presented, the Multiple Local Owner and the Minnesota-Style “Flip” Structure, are the two deemed most attractive by the study on Oregon; they appear to be equally attractive to Vermonters.

- **Multiple Local Owner:** Under this model, a group of locals pool their financial resources to form a Limited Liability Corporation (or LLC) through which they develop a utility-scale wind project. The wind project sells the power it generates to a local utility and the investors benefit from sales relative to their level of investment.⁴⁰ A couple of notes:

1. Power: In order to sell the power, the project has to find an interested utility, and negotiate a power purchase agreement (PPA) with them.
2. Investors: At least one of the local investors must be a corporate equity partner with “tax credit appetite” (or enough tax liability to utilize federal incentives, such as the Federal Production Tax Credit or PTC). Sinclair of the Clean Energy Group believes that numerous investors could be found in Vermont.⁴¹
3. Incentives: This model makes use of federal incentives, such as the PTC.
4. Other: As investors buy shares in the LLC, the project will have to undergo the sometimes expensive process of either registering or applying for an exemption for them (as they are considered securities by the U.S. Government).⁴²

This type of ownership model is currently being employed in Minnesota by projects such as Minwind I & II, and is definitely a viable option in Vermont. As the case study of Minwind I & II (see “A Case Study: Minwind I & II”) demonstrates, the multiple local owner model can be hugely successful. Such a model is an attractive option for Vermonters interested in developing a community wind project, and could be especially promising for local farmers who are struggling to make ends meet.

- **Minnesota-Style “Flip” Structure:** This model is based on the partnership of a local investor (usually one who owns a site with high wind speeds) and a corporate equity partner who has tax-credit appetite and can utilize federal incentives.⁴³ Together, the two form an LLC, and sell the power to a utility. During the first ten years of the project’s life, the corporate equity partner owns up to 99% of the project, and the local partner owns as little as 1%.⁴⁴ During this period, the corporate equity partner claims the PTC and other tax benefits,⁴⁵ while the income generated by the sale of power is divided proportionately based on each partner’s investment. After ten years, the ownership flips (if the local partner owned only 1% of the project for the first ten years, he or she will own 99% of the project for its remaining lifetime).⁴⁶ A couple of notes:

1. Power: The project requires a power purchase agreement with a utility.
2. Investors: A corporate equity partner with tax credit appetite is needed.
3. Incentives: This model makes use of federal incentives, such as the PTC.

This model is attractive because the corporate equity partner supplies the majority of startup capital and can collect tax credit incentives, while the local partner is given a debt-free wind project after ten years that will continue to generate power (and income) for another twenty years.⁴⁷ This model is being used in Minnesota and is an attractive option for a community wind project in Vermont.

- **Town Owned:** With this model a municipality would develop and own a utility-scale wind project and sell the power to a utility in order to raise money for the town budget.⁴⁸ The municipality would not use any of the power for on-site consumption (an activity which would require net-metering), but would rather sell the power directly to a utility.
 1. Power: The project requires a power purchase agreement with a utility.
 2. Investors: The investor is the town.
 3. Incentives: The town could utilize two major federal financial incentives, the PTC and the Renewable Energy Production Incentive (REPI).

There have been issues of legality associated with this project in states across America, and one would have to research its legal standing in Vermont. While some towns have initially faced legal problems while trying to utilize this model, many have ultimately met with success.

For example: This model is currently being pursued by the *Community Wind Collaborative* in Massachusetts, as well as by a school district in Northfield, Minnesota. A legal opinion was issued for the *Community Wind Collaborative* that found towns could legally own a wind project and sell the power to a utility in the state of Massachusetts.⁴⁹ In Northfield, the Minnesota Attorney General ruled that school boards could not legally own a wind project; however, the Minnesota legislature has since passed a law legalizing the model.⁵⁰

- **On-Site Behind the Meter:** This model is used by taxable or tax-exempt entities and is especially popular among towns and schools. Under this model, the entity develops a utility-scale wind project for on-site usage⁵¹ (the power would be used by a nearby building, such as a school) and arranges to net-meter with a local utility.
 1. Power: The project requires a utility that will agree to net-meter for you. In Vermont, utilities do not currently have to net-meter for projects with an output of more than 15 kWh.
 2. Investors: Investors are often tax-exempt entities, because taxable entities have to pay taxes on their electric bill savings, and tax-exempt entities do not.⁵²
Incentives: Developers cannot use the major federal incentives, such as the PTC and REPI,⁵³ but can explore other options, such as U.S. Department of Agriculture grants and Vermont incentives.

While this model cannot yet be utilized in Vermont due to net metering standards, it may soon have a future in the state. The Vermont legislature is considering a program which would allow schools and public buildings to develop renewable energy projects for on-site use in an effort to reduce electricity bills and lower property taxes.⁵⁴ As part of the program, the Vermont legislature is also exploring the expansion of net-metering standards and the use of the state's Clean Energy Fund.

- **Municipal Utilities:** Municipal utilities are excellent candidates for developing community wind projects. While Hull Wind in Hull, Massachusetts (see "A Case Study:

Hull Wind”), was developed by a municipal utility on its own, many community wind projects are developed by a group of municipal utilities that band together in a joint investment so as to make the endeavor more affordable. For example, seven municipal utilities in Iowa own a community wind project together. Read the case study at <http://www.awea.org/news/news991211alg.html> . This type of arrangement might be ideal for municipal utilities in Vermont.

- **Other Models:** There are several other models which one can consider before developing a community wind project. These models include the Cooperative Ownership, Aggregate Net-Metering, and Wisconsin-Style “Flip” Structure.

Incentives

While investing in a community wind project is an expensive endeavor, there are both federal and state incentives available to help with the cost. Please note that subsidies for community wind projects do not mean that this renewable energy is less cost effective than a nonrenewable energy. In fact, nonrenewable energy industries, such as nuclear power, receive extensive subsidies from the U.S. government.⁵⁵ (The nuclear power industry has received over \$100 billion of tax payers’ dollars in subsidies for research and development, protection against liability in the event of an accident, and more.⁵⁶) Financial incentives should be carefully considered before selecting an ownership model for a community wind project, as each is geared toward aiding different types of entities. The following is a brief description of two Vermont incentives:

State Incentives

- **Solar & Small Wind Incentive Program:** Community wind projects owned by schools, municipalities, businesses, or even individuals in Vermont can seek funding from the Solar & Small Wind Incentive Program. This program was established in 2003 as a rebate incentive for renewable energy systems and all wind systems are eligible for funding. Under this program, all wind systems are eligible for incentive dollars. Currently, the program is in its second round of funding, which began in September 2005. This round makes \$800,000.00 available to renewable energy systems over two years, \$460,000.00 of which is reserved for wind systems.⁵⁷ The rebate cost varies depending on the owner of the proposed wind system. Schools and municipalities can garner \$4.50 per kWh, while individuals and businesses can obtain \$2.50 per kWh or up to \$4.00 per kWh if the system is manufactured in Vermont.⁵⁸ The rebate program covers approximately 25% of the total cost of the wind system, or the first 5 kWh of a new system.⁵⁹ The program specifies that larger systems owned by individuals and businesses are eligible, but are capped at \$12,500.00, and those owned by schools and municipalities may receive the lesser of \$20,000.00 or 50% of the total project costs.⁶⁰ As of April 7, 2006, \$15,250.00 was reserved for wind systems, and \$454,650.00 remained in the program’s fund.⁶¹ Community wind projects qualify for this program.

- **Clean Energy Fund:** Established by the state of Vermont and managed by the VTDPs, the Clean Energy Fund currently contains \$1.3 million and is expected to hold \$15 million by 2012.⁶² This money has not yet been allocated to specific projects.

Federal Incentives:

Many community wind projects in Vermont will also be eligible for federal incentives, such as those discussed below.

- **Renewable Energy Production Incentive (REPI):** The REPI can be used by state and local governments (such as municipal utilities) or not-for-profit electric cooperatives that own a renewable energy power facility (such as a community wind project).⁶³ The amount of the incentive payment changes every year, and it is currently set at 1.5 cents per kWh for the first ten years of a generation facility's operation.⁶⁴ The REPI was recently renewed through 2026 in the Energy Policy Act of 2005 (H.R. 6).⁶⁵
- **Federal Production Tax Credit (PTC):** The PTC is available to private developers and investor-owned utilities (IOUs);⁶⁶ publicly owned projects cannot take advantage of the PTC.⁶⁷ The PTC is an inflation-adjusted tax credit for electricity produced by a renewable energy source, such as wind.⁶⁸ Currently (2006), the PTC amount is equivalent to 1.9cents/kWh. It has expired and been renewed several times; the PTC was most recently renewed in the Energy Policy Act of 2005 (H.R. 6) which extended the credit through December 31, 2007.⁶⁹
- **Clean Renewable Energy Bonds (CREBs):** CREBs differ from the PTC in that a CREB is a financing tool, whereas a PTC is made available only after a facility is built and generating power.⁷⁰ Both municipalities and public agencies can use CREBs, which are tax credit bonds that act as interest-free loans for renewable energy projects.⁷¹ Created by the Energy Policy Act of 2005 (P.L 109-58), the program will run for two years. Although the deadline to apply for this round of funding passed in April 2006, developers of community wind should keep their eyes open for its renewal in future years by the U.S. Congress. This round of funding is capped at \$800 million.⁷²
- **Other:** One should also consider the following federal incentives for community wind projects: U.S. Department of Agriculture grants, loans, and re-lending programs, as well as 5-Year Accelerated Depreciation or MACRS.

Conclusion

As the State of Vermont's contracts expire with Vermont Yankee Nuclear Power Station and HydroQuébec in future years, Vermonters must develop renewable energy sources to replace them. Community wind projects are an excellent place to begin. The rewards of such projects have already been discovered in states such as Massachusetts, Minnesota, California, Oregon, and Washington, to name a few. Vermont should not be left behind. Community wind projects in Vermont have the potential to benefit local economies, aid struggling farmers, and preserve the

environment, on which the maple sugar, agriculture, and tourism industries of the state are dependent.

State Wide Plan of Action

State governments across America are beginning to explore and implement policies and standards that encourage the development of renewable energies. The following is a brief overview of policy changes which would be welcome in Vermont by supporters of community wind projects and other renewable energy sources.

- **Net-Metering**: The State of Vermont should expand net-metering standards to include commercial-scale wind projects. A number of states have chosen to do so; distributed generation advocates (those who support smaller scale renewable energy projects) tout the state of New Jersey as leading the country in net-metering standards.⁷³ Currently, New Jersey utilities must net-meter for renewable energy projects (including wind) with an output of up to 2MW.⁷⁴ While Vermont should expand its net-metering standards, the state should not overlook utilities' concerns regarding compensation for maintenance of distribution lines and stand-by services.
- **Decoupling**: Sinclair believes that utilities would be more apt to pursue renewable energy sources if their rates were decoupled. Decoupling is defined as breaking the "link between sales and revenue to eliminate utilities' incentive to increase sales of their commodity to increase their profits."⁷⁵ Advocates of decoupling perceive the current cost-of-service rate structure to create an incentive for utilities to sell as much power as possible at the greatest profit to them.⁷⁶ Oftentimes, such a structure inhibits utilities from pursuing renewable energy sources and distributed generation (the type of generation a community wind project would provide).⁷⁷ There is no one way to decouple utility rates; rather, one must consider the goals of decoupling and how it would impact specific states and renewable energy projects. Lawmakers should review other states' decoupling mechanisms and consider such a policy for Vermont in an effort to encourage utilities' purchase of renewable energy sources.

***Decoupling Example**: California is one of several states that has decoupled its utilities' rates. Before restructuring, California adopted an Electric Revenue Adjustment Mechanism (ERAM). Under ERAM, utilities set caps that were based on costs. When California restructured, decoupling was abandoned; however, Californian utilities have since begun to adopt utility specific decoupling policies.⁷⁸ For example, one utility adopted limits per customer for distribution costs, while another uses an inflation index to target fixed-generation costs.⁷⁹

- **State Incentives**: Vermont should create tax credits, grants, and production incentives to encourage community wind development. The following are examples of successful incentives which encourage community wind development in other states:
 1. **Oregon Business Tax Credit**: Oregon provides those who make a 25% investment in renewable energy projects with a 10% tax credit for the first two years of investment and 5% for the following three years.⁸⁰ This incentive specifically

creates an incentive to invest in community wind projects as they are small and thus will require a smaller dollar amount to reach the investment standard.

2. Iowa Renewable Production Tax Credit: Iowa offers a production tax credit of \$.01 per kWh that lasts for ten years.⁸¹ The program will provide this credit to systems until the program's total capacity is reached at 450 MW.⁸² The credit counts against state, business, or financial institutions tax.⁸³
 3. Minnesota Renewable Production Incentive: This program (which ended in 2005) offered a \$.015/kWh subsidy for systems with an output of up to 2 MW.⁸⁴ The program will provide this incentive to systems until the program's total capacity is reached at 200 MW.⁸⁵ Ideally, this program would have a higher capacity ceiling than 2 MW for individual renewable energy systems.
- State Sponsored Pilot Projects: The State of Vermont should facilitate and provide partial funding for two community wind projects. In regard to facilitation, the State should work with renewable energy advocates and the Department of Public Service to determine the two ownership models which are most viable according to current Vermont law and standards. Each project should be assigned a model. The State should also solicit towns' interest, help fund feasibility studies for turbine sites, and offer state incentives. State sponsored community wind projects are an excellent way to learn about how community wind projects function in Vermont. What benefits do they bring? What problems do they encounter? What decisions can be made differently in the future? Would new state incentives help foster their success? Most importantly, state sponsorship of community wind projects would encourage Vermonters to develop projects of their own in the future.

Resources

State of Vermont Websites:

Vermont Department of Public Service:

The “Electric” section provides information on Vermont utilities, while the “Renewables & Efficiency” section contains publications of Vermont wind studies and funding opportunities.

<http://publicservice.vermont.gov/index.html>

Vermont Public Service Board:

Information on permits, applications, utilities, hearings, and more.

<http://www.state.vt.us/psb/>

Vermont Wind Maps:

Wind Resource Mapping of Vermont Counties:

VERA’s detailed maps of wind in Vermont. Made in 2004.

<http://www.northeastwind.com/resources/maps.html>

Vermont Financial Incentives:

State Incentives for Renewable Energies:

Information on Vermont’s state financial incentives and standards for renewable energy.

<http://www.dsireusa.org>

The Vermont Solar & Small Wind Incentive Program:

Information on the incentive program.

<http://www.rerc-vt.org/incentives/index.htm>

Vermont Permits:

Citizens’ Guide to the Vermont Public Service Board’s Section 248 Process

Vermont Public Service Board’s guide to permitting for commercial-scale wind projects in Vermont.

http://www.state.vt.us/psb/document/Citizens_Guide_to_248.pdf

Permits for Small-Scale (Net-Metered Wind):

Application for net-metering a community wind project:

http://www.state.vt.us/psb/application_forms/application_forms.stm

Case Studies:

Windustry’s links to case studies of community wind projects in America.

<http://www.windustry.org/community/projects.htm>

Federal Incentives:

U.S. Department of Agriculture

The Renewable Energy and Energy Efficiency Program. This website includes details on USDA incentives and details regarding Vermont.

www.rurdev.usda.gov/vt/

Publications:

Community Wind: An Oregon Guidebook

Prepared by Northwest Sustainable Energy and Economic Development at the request of the Energy Trust of Oregon, June 15, 2006

A comprehensive, easy-to-understand guide to developing a community wind project.

http://www.energytrust.org/RR/wind/community/forms_request.html

Community Wind Development, Supportive Policies, Public Financial Incentives, Best Management Practices

Prepared by Columbia University on behalf of the Clean Energy States Alliance, April 2006

This document includes a number of community wind case studies, as well as an overview of successful state policies and incentives.

www.powernaturally.org/Programs/Wind/toolkit/CommunityWindDevColumbiaRpt.pdf

A Comparative Analysis of Community Wind Power Development Options in Oregon

Published by the Energy Trust of Oregon, July 2004

This publication provides a comprehensive analysis of ownership models, financial incentives, potential barriers, and recommendations.

www.energytrust.org/RR/wind/OR_Community_Wind_Report.pdf

Community Wind Financing

Published by the Environmental Law & Policy Center, 2004

Includes information on ownership and financing models, and federal incentives.

<http://www.elpc.org/documents/WindHandbook2004.pdf>

General Websites:

Windustry:

Includes basic information on all aspects of wind, and includes several publications.

<http://www.windustry.com>

National Renewable Energy Laboratory:

NREL is one of the leading laboratories in research and development of renewable energy.

<http://www.nrel.gov/>

American Wind Energy Association:

This site provides access to publications, lists of wind turbine manufacturers, and more.

<http://www.awea.org/>

Utility-Scale Wind Turbine Manufacturers and Distributors:*

Gamesa Eólica (Spain)
GE Energy (California)
Lorax Energy Systems, LLC (Rhode Island)
Notes

Mitsubishi Power Systems, Inc. (California)
Siemens Wind Power A/S (Denmark)
Suzlon Wind Energy Corp. (Illinois)
Vestas Americas (Oregon)

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